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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,982	08/30/2001	Hiroshi Arakawa	16869P-031600US	1364

			EXAMINER
20350	7590	02/09/2006	LAZARO, DAVID R

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/943,982	ARAKAWA ET AL.
	Examiner	Art Unit	
	David Lazaro	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-8 and 16-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-8 and 16-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the amendment (RCE) filed 11/16/05.

2.   Claims 1, 17, 21 and 22 were amended.

3.   Claims 3-5 and 9-15 are canceled.

4.   Claims 1, 2, 6-8 and 16-25 are pending in this office action.

Response to Amendment

5.   Applicant's arguments filed 11/16/05 have been fully considered but they are not

persuasive. See Response to Arguments. Accordingly, the rejection, as set forth in the

action mailed 06/17/05, is maintained and adjusted in light of the amendment.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7.   Claim 1, 2, 6-8 and 16-25 are rejected under 35 U.S.C. 102(e) as being

anticipated by U.S. Patent 6,304,980 by Beardsley et al. (Beardsley).

8.   With respect to Claim 1, Beardsley teaches a backup processing method for

backing up data to be used by a data-processing computer system, the method

comprising the steps of:

selecting resources in a usable state from a plurality of resources necessary for

backing up data, the data to be used by the data-processing computer system and

stored in a storage system thereof (Col. 8 line 56 - Col. 9 line 53);

selecting switches in a usable state from a plurality of switches necessary for

forming routes among the selected resources (Col. 11 lines 8-42);

determining which of the selected resources and selected routes are secure(Col.

11 lines 34-42, Col. 12 lines 31-63, and Col. 13 lines 54 - Col. 14 line 42); and

securing a one group of the selected resources and selected routes as a first

path between the storage system and a first destination and another group of the

selected resources and selected routes as a second paths between the storage system

and a second destination different from the first destination (Col. 11 lines 34-42, Col. 12

lines 31-63, and Col. 13 lines 40 - Col. 14 line 42: the path to the primary DASD is the

first path to a first destination, the path to the secondary DASD is the second path to a

second destination different from the first destination);

executing backup processing by using the first path and a backup instruction

command set having a plurality of backup commands, each backup command backing

up a different portion of the data, every portion of the data having a corresponding

backup command, the backup processing including executing one or more of the

backup commands (Col. 9 lines 54-62, Col. 11 line 66 - Col. 12 line 7, Col. 17 lines 64 -

Col. 18 line 6);

detecting if a problem occurs in the first path based on a result of execution of

one of the backup commands in the backup instruction command set (Col. 15 lines 33-

44 and Col. 17 lines 3-39, also see in general Col. 16 line 4 - Col. 19 line 24 for

alternative embodiments of problem detection);

changing from the first path to the second path if a problem is detected; and

continuing execution of the backup processing by using the second path and

executing backup commands in the backup instruction command sets that have not yet

been executed (Col. 17 line 54 - Col. 18 line 6).

9.   With respect to Claim 2, Beardsley teaches all the limitations of Claim 1 and

further teaches wherein backup processing is executed by using the first or the second

path, and when the backup processing has been fully executed by one or both of the

paths, regarding the backup processing as successful (Col. 17 line 47- Col. 18 line 6).

10.   With respect to Claim 6, Beardsley teaches all the limitations of Claim 6 and

further teaches including a step of storing information relating to the backup processing

of the backed-up data (Col. 9 lines 54-62 and Col. 17 line 20 -Col. 18 line 6).

11.   With respect to Claim 7, Beardsley teaches all the limitations of Claim 2 and

further teaches including a step of storing information relating to whether the backup

processing of the backed-up data was successfully executed (Col. 9 lines 54-62 and

Col. 17 line 20 -Col. 18 line 6).

12.   With respect to Claim 8, Beardsley teaches all the limitations of Claim 7 and

further teaches wherein data stored relating to the successful execution of the backup

processing is used to determine if the data can be restored (Col. 9 lines 54-62 and Col.

17 line 20 -Col. 18 line 6).

13.   With respect to Claim 16, Beardsley teaches all the limitations of Claim 1 and

further teaches terminating execution of the backup processing if the second path is not

secured (Col. 12 lines 52-62 and Col. 17 lines 20-39).

14.   With respect to Claim 17, Beardsley teaches a computer managing a system

which includes a plurality of resources, comprising:

         a processing unit (Col. 9 lines 14-54); and

         a network interface connectable to the plurality of resources via a network (Col. 9

lines 14-54), wherein the processing unit is operable to:

         select resources in a usable state from the plurality of resources necessary for

backing up data stored in a storage system (Col. 8 line 56 - Col. 9 line 53);

         determine which of the selected resources are secure (Col. 11 lines 34-42, Col.

12 lines 31-63, and Col. 13 lines 54 - Col. 14 line 42);

         secure a first group from among the selected resources to define a first path

between the storage system and a first storage resource;

         secure a second group from among the selected resources to define a second

path between the storage system and a second storage resource different form the first

storage resource (Col. 11 lines 34-42, Col. 12 lines 31-63, and Col. 13 lines 54 - Col. 14

line 42: the path to the primary DASD is the first path to a first storage resource, the

path to the secondary DASD is the second path to a second storage resource different

from the first storage resource);

initiate first backup processing via the first path by issuing a backup instruction

command set via the network interface to the first group of resources, the backup

instruction command set having a plurality of backup commands, each backup

command effective to backup a portion of the data stored in the storage system,

wherein one or more of the backup commands are executed to backup one or more

portions of the data via the first path (Col. 9 lines 54-62, Col. 11 line 66 - Col. 12 line 7,

Col. 17 lines 64 - Col. 18 line 6);

detect if a problem occurs in the first path based on a result of execution of one

of the backup commands (Col. 15 lines 33-44 and Col. 17 lines 3-39, also see in

general Col. 16 line 4 - Col. 19 line 24 for alternative embodiments of problem

detection);

initiate a change from the first path to the second path if the problem is detected

(Col. 17 line 54 - Col. 18 line 6); and

initiate second backup processing via the second path by issuing a remaining

portion of the backup instruction command set via the network interface to the second

group of resources, the remaining portion of the backup instruction command set

including those backup commands which had not been previously executed (Col. 17

line 54 - Col. 18 line 6).

15.   With respect to Claim 18, Beardsley teaches all the limitations of Claim 17 and

further teaches terminating execution of the backup processing if the second path is not

secured (Col. 12 lines 52-62 and Col. 17 lines 20-39).

16.   With respect to Claim 19, Beardsley teaches all the limitations of Claim 18 and

further teaches wherein backup processing is executed by using the first or the second

path, and when the backup processing has been fully executed by one or both of the

paths, regarding the backup processing as successful (Col. 17 line 47- Col. 18 line 6).

17.   With respect to Claim 20, Beardsley teaches all the limitations of Claim 19 and

further teaches wherein the processing unit stores information relating to whether the

backup processing of the backed-up data was successfully executed, wherein the

processing unit indicates to execute data restore based on the information (Col. 9 lines

54-62 and Col. 17 line 20 -Col. 18 line 6).

18.   With respect to Claim 21, Beardsley teaches all the limitations of Claim 17 and

further teaches a memory (Col. 10 lines 29-54),

        wherein the data that is backed up is referred to as backed-up data and can be

stored in the first storage resource in the first path or in the second storage resource in

the second path (Col. 9 lines 14-44),

        wherein the processing unit stores backup information relating to the backup

processing of the backed-up data into the memory, the backup information indicating

which portions of the backed-up data are stored in the first storage resource and which

portions of the backed-up data are stored in the second storage resource (Col. 9 lines

54-62 and Col. 17 line 20 -Col. 18 line 6),

wherein the processing unit initiates restoring of the backed-up data based on
the backup information, including performing steps of:

accessing the backup information in connection with a first portion of the backed-
up data and determining whether the first portion is stored on the first storage resource
or on the second storage resource; accessing either the first storage resource or on the
second storage resource to obtain the first portion; and repeating the above steps for
additional portions of the backed-up data, thereby restoring the data from the backed-up
data (Col. 10 lines 14-27).

19.   With respect to Claim 22, Beardsley teaches a system comprising:

a storage system (Col. 9 lines 14-54);

a plurality of library systems (Col. 9 lines 14-54);

a plurality of copy devices (Col. 9 lines 14-54);

a plurality of switches which are connectable among the storage system, the
plurality of library systems and the plurality of copy devices (Col. 11 lines 8-42); and

a management computer connectable to the plurality of switches, the storage
system, the plurality of library systems and the plurality of copy devices via a network,

wherein the management computer is operative to:

select library systems in a usable state from the plurality of library systems
necessary for backing up data stored in the storage system (Col. 11 lines 34-42, Col. 12
lines 31-63, and Col. 13 lines 54 - Col. 14 line 42);

select switches in a usable state from the plurality of switches necessary for
forming routes from the storage system to the selected library systems, thereby

securing a first group of selected library systems and selected switches as a first routes

for backup and securing a second group of selected library systems and selected

switches as a second route (Col. 11 lines 34-42, Col. 12 lines 31-63, and Col. 13 lines

54 - Col. 14 line 42);

select a first copy device in a usable state from the plurality of copy devices for

the first route and a second copy device in a usable state from the plurality of copy

devices for the second route; and

initiate execution backup processing via the first route by issuing backup

instruction command set including a plurality of backup commands, each backup

command indicating to transfer part of the data stored in the storage system to the first

copy device or to the second copy device, wherein the first copy device sends portions

of data from the storage system to a first library system included in the first route in

accordance with one or more of the backup commands (Col. 9 lines 54-62, Col. 11 line

66 - Col. 12 line 7, Col. 17 lines 64 - Col. 18 line 6), and notifies the management

computer if an error in the first route is detected (Col. 15 lines 33-44 and Col. 17 lines 3-

39, also see in general Col. 16 line 4 - Col. 19 line 24 for alternative embodiments of

problem detection),

wherein the management computer initiates execution backup processing via the

second path by issuing a remaining portion of the backup instruction command set to

the second copy device if the management computer receives an error notification from

the first copy device (Col. 17 line 54 - Col. 18 line 6),

wherein the second copy device sends data from the storage system to a second library system included in the second route in accordance with the remaining portion of the backup instruction command set (Col. 17 line 54 - Col. 18 line 6).

20.   With respect to Claim 23, Beardsley teaches all the limitations of Claim 22 and further teaches wherein the management computer terminates execution of the backup processing if the second route is not secured (Col. 12 lines 52-62 and Col. 17 lines 20-39).

21.   With respect to Claim 24, Beardsley teaches all the limitations of Claim 23 and further teaches wherein backup processing is executed by using the first or the second path, and when the backup processing has been fully executed by one or both of the paths, regarding the backup processing as successful (Col. 17 line 47- Col. 18 line 6).

22.   With respect to Claim 25, Beardsley teaches all the limitations of Claim 24 and further teaches wherein the management computer stores information relating to whether the backup processing of the backed-up data was successfully executed, wherein the management computer selects the first route based on the information, indicates the copy device to execute data restore from a library system included in the first route to the storage system via the first route (Col. 9 lines 54-62 and Col. 17 line 20 -Col. 18 line 6).

Response to Arguments

23.   Applicant's arguments filed 11/16/05 have been fully considered but they are not persuasive.

24.   Applicants argue on page 8 of the remarks - *"Beardsley et al. show a primary
DASD and a second DASD; e.g., Figs. 1 and 2 (Fig. 2 also shows a control info. DASD,
217). Since the figures show only one primary DASD and one second DASD, Beardsley
et al. do not show or suggest backup processing using a first path between a storage
system and a first destination and a second path between the storage system and a
second destination different from the first destination, as recited in claim 1 and similarly
in claims 17 and 22."*

       a.   Examiner's response - The examiner does not see how a figure showing

only one primary DASD and one second DASD is evidence of not showing

"backup processing using a first path between a storage system and a first

destination and a second path between the storage system and a second

destination different from the first destination". In fact, the examiner interprets

Fig. 1 and 2 as clearly showing that there is a first destination (primary DASD)

and a second destination different from the first destination (secondary DASD). It

is further clear from these figures that a storage system (for example the primary

Host) would have two different paths in order to backup data as described in Col.

13 line 40 - Col. 14 line 42 (note this describes, in part, how the path is secured).

Applicants make no attempt to explain the relevance of their statement of *"Since*

the figures show only one primary DASD and one second DASD". As such,

Applicants arguments are essentially conclusive statements, and it is clear that

the teachings of Beardsley are still within the scope of the claimed subject

matter. For these reasons, Applicants' arguments are not persuasive.

Conclusion

25.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

26.   U.S. Patent 5,448,718 by Cohn et al. "Method and system for time zero backup session security" September 5, 1995. Discloses designation of paths from a group of paths for a backup session between an application and storage system.

27.   U.S. Patent 5,948,108 by Lu et al. "Method and system fro providing fault tolerant access between clients and a server" September 7, 1999. Discloses establishing multiple backup paths such that if a primary connection fails, the secondary connections can be used.

28.   U.S. Patent 5,966,730 by Zulch "Backup system for computer network incorporating opportunistic backup by prioritizing least recently backed up computer or computer storage medium" October 12, 1999. Discloses generation of all possible source to storage paths which are subsequently prioritized and backups initiated according to the prioritization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lazaro whose telephone number is 571-272-3986. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

David Lazaro
January 31, 2006

SALEH NAJJAR
SUPERVISORY PATENT EXAMINER